



# IBI Guidelines

for Projects and Theses @ IBI

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ETH Zürich  
Institut für Bau- und Infrastrukturmanagement



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# 1. Introduction

The following information and recommendations serve as a guide for formal and structural design of scientific work at the Institute of Construction and Infrastructure Management (IBI). This guidelines can be seen as a minimal basis for scientific work at the above-mentioned Institute.

This guide is mainly for students who are preparing their graduation project (bachelor- or master project, or master's thesis). In this guideline the procedure is described which should be followed by the student and the supervisor in order to meet all the graduation requirements. In this guide the general criteria for a satisfactory project are also listed.

There are various ways to create, prepare and publish scientific work. Different layouts, outlines, citation styles, etc. are permitted, with respect to the general rules of academic work. But for the work at the Institute it is highly recommended to keep the present specifications.

The Institute of Construction and Infrastructure Management (IBI) offers additional to this guide a template that has to be used mandatory for the creation of the Master's thesis. It can be obtained from the supervising assistants and also from the Institute website<sup>1</sup>.

We hope that the information provided in this brochure will enable the student to work successfully on his or her thesis. Remaining questions about the procedure can be addressed to the administration office. Theoretical questions concerning the content of the thesis should be discussed with the supervisor.

## 1.1. Structure of the Guide

In **chapter 2** Administration and Organization a quick overview over general requirements and procedures is given. Beside a proposed scheduling of the work also the common communication with the supervisor is addressed. A precise list of documents which have to be handed in at the end of the work is given in **chapter 3** "Materials and Submission". How the Grade will be compound is described in **chapter 4**. Also a list of knock-out criteria is given there. A guideline for the Format and Style of the deliverable is given in **chapter 5**. Beside some formal guidelines also specification of the content of each deliverable are listed. In **chapter 6** "Citation", a short introduction how to cite right is given and in the appendix a short checklist for the submission is listed.

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1. <http://www.im.ibi.ethz.ch/en/education/downloads.html>



## 2. Administration and Organization

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### 2.1. Scientific Work

Scientific work includes the independent, structured investigation of a topic using scientific methods and the logical presentation of the obtained research results.

This approach has to comply with certain principles:

- Honesty
- Objectivity
- Unambiguity
- Homogeneity
- Clarity
- Replicability

These principles can be found in relevant literature on this topic, including the guidelines for research integrity of the ETH Zürich (ETHZ [2008b](#)).

It is very easy to find helpful material on the web. Do not be tempted to copy such material verbatim into your work and pass it off as your own. Plagiarism is a violation of intellectual honesty. This means copying other people's work or ideas without due acknowledgement, thus giving the reader the impression that these are your own work and

## 2. Administration and Organization

ideas. Plagiarism is the most serious violation of academic integrity and can have dire consequences, including suspension and expulsion.

Academic work almost always builds upon the work of others, and it is appropriate, indeed essential, that you discuss the related and previous work of others in your thesis. However, this must be done according to the rules of acceptable use. For more information see [chapter 6](#).

## 2.2. Some remarks on the work

### 2.2.1. Fix the topic

Many students find it difficult to choose a topic for their project. Usually, a fruitful research question does not emerge easily. The student should therefore spend some time thinking about it. The goals of the project have to be understood to avoid misunderstandings.

First and foremost, the topic should be interesting for the student!

After the topic is fixed, the student has to become aware of the subtasks, to make reasonable work packages out of them and to estimate their duration.

### 2.2.2. Scheduling the work

At the beginning of the work stands the definition of the goals and a good time schedule. This should be agreed upon with the other group members (if working in a group) and has to be discussed and specified in detail with the supervising assistant. A realistic formulation of goals and timing, as well as the definition of meaningful milestones and working procedures form the basis of success.

According to the given timeframe and the student's own obligations, the students shall prepare a Gantt chart showing all the tasks, subtasks, and key milestones/deliverables/interim meetings (project schedule).

The student should also allow for approximately two weeks for the completion of the report, the presentation and the documents to be delivered within the given timeframe. The project schedule has to be presented in the first meeting with the supervisor(s) and has to be discussed with them. Any changes made to the project schedule during the first meeting shall be immediately incorporated in the project schedule. The student shall be responsible for maintaining the project schedule.

The following Gantt chart in [Figure 2.1](#) shows an example of the schedule for a typical project with a duration of 14 weeks.

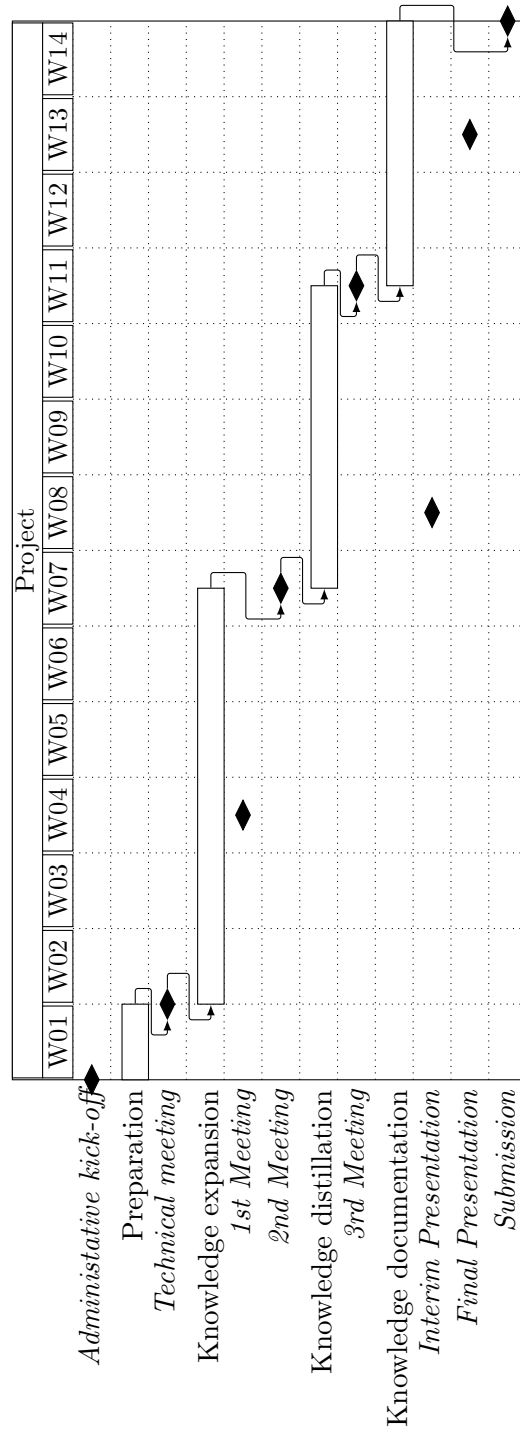


Figure 2.1.: Gantt Chart.

### 2.2.3. Good scientific practice

At all times during the work for the project, attention has to be paid to good scientific practice (independently whether this work is done in the laboratory of the institute, at a guest institution abroad, at the PC at home or at a computer terminal).

### 2.2.4. General requirements

The representation of the work must meet the requirements listed in Section 2.1, but at least the following:

- It must be readable (with benefit) by a generally interested and educated engineer, even if he/she is not close to the subject of your work.
- The work must be a concise and clearly structured documentation of
  - the scientific background of the work
  - the goals posed
  - the experimental and theoretical methods applied
  - the results and
  - their evaluation as well as
  - an appropriate summary.
- It must contain all substantial information, which allows a following generation of undergraduates, graduate students and other coworkers to immediately continue the work.
- Beyond that it must - at least in principle - put a third, expert person into such state that he/she can rebuilt the experimental setup and reproduce thus your results unambiguously - and as far as relevant reconstruct the theoretical results accurately.
- It must report all necessary information to allow its evaluation with clear criteria and free of doubts by an outside expert and critical reader (who must not necessarily be familiar with the details of this particular work): from which conditions of the research did the author proceed at the beginning of the work? Which experimental (if necessary theoretical or computational) starting conditions were given for the work presented now. Which own theoretical developments, programmes and experimental apparatus did the present author build up himself? Which assistance and aids did he have in doing so? Which specific results are the genuine work of the author.
- One important aspect of the discussion of results must be to critically evaluate possible systematic and statistic errors and to assess the validity of the conclusions drawn. It must also become evident, which progress the field of research as a whole took during the duration of the work presented and how the undergraduate/graduate student values his/her own contribution to this evolution.



## 2.3. Supervision

The project is under the supervision of a professor of the Institute of Construction and Infrastructure Management and is co-supervised by at least one assistant. Also external persons can be supervising parts of the project. Contact to external persons must be agreed on by the assistant. Polite behaviour is mandatory when contacting the supervisors.

### 2.3.1. Communication with the supervisor

For open questions, the assistant is the primary contact person. He or she is available during the office hours. Appointments outside the office hours have to be requested. Communication via email is also possible. Therefore, formal requirements has to be satisfied:

- Please, do not send mails to the Professor in the first stage! (also not in cc)
- Select meaningful, at the same time short subjects.
- Keep your email concise, conversational, and focused.
- Use openings and closings.
- Think before you send.

Communication with external persons and the professor has to be agreed upon by the assistant in order to prevent misunderstandings in the project.

### 2.3.2. Documentation of the communication

After each meeting with the supervisor(s) or other involved parties (also external) the student shall prepare a short report (meeting minutes) indicating the participants and the summary of the items addressed during the meeting, including due dates, changes, and any agreements/modifications made to the project. A draft version of the meeting minutes prepared by the student shall be distributed in electronic form to all parties involved no later than three (3) days after the date of the meeting. The student will receive feedback from the direct supervisor no later than three days upon receiving the meeting minutes. The student shall incorporate any comments/modifications to the meeting minutes made by the direct supervisor and distribute a final/approved version. A copy of the approved meeting minutes will remain at the IBI.

## 2.4. Materials

Except for the materials published at the homepage, and the sample literature provided, all the project specific materials are considered confidential. The materials have to be used by the student for the purposes of his or her project only and shall not be distributed to third parties or used by the student after the completion of his or her project. At the

## *2. Administration and Organization*

end of the project, the students should not be using the project specific materials provided and must include a signed statement of this when handing in the final report.

The project and all information and findings from and about it, including concepts, interviews, ideas and obtained results have to be kept confidential and secret. The student must not pass project documents and findings orally or in writing without a written agreement of Prof. Dr. Bryan T. Adey.

## 3. Submission

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In the scope of the work, the student should prove that she or he is able, to conduct the project independent, complete and in a scientific way, within the given period of time.

To prove and grade those skills, the student has to document the different steps of the work and submit these in an appropriated format.

The documents for submission are:

Table 3.1.: Parts of the Submission

Part	Comments	Format	Section
Read-me	contains a summary and content of the work	txt	3.3
Report	one original version and one version for proof-reading	tex, lyx, docx	3.5
Poster		tex, pptx	3.5
Presentation	interim and final presentation	tex, pptx	3.6
Minutes		tex, lyx, docx	3.7
Figures	preferred are vector graphics like pdf, eps, svg, ...		3.8
Tables		tex, csv, xlsx	3.8
Sources		pdf and bib	3.9

## 3.1. Before Submission

All submitted reports are automatically checked with plagiarism detection software. See chapter 6 for correct citation and additional information. If the suspicion of plagiarism is confirmed, a disciplinary procedure will be initiated in accordance with the Disciplinary Code.

## 3.2. Formats and Structure

For the final submission two parts are expected: A printed version of corresponding parts of the work (e.g. Report, Poster, ...) and a USB stick with a collection of all produced files during the project, including also the source files of the documents. Thereby, the student should choose an appropriate software so that the source files can be opened at any operating system (Windows, OSX and Linux).

In the scope of good scientific practice, the software used should be free available (e.g. L<sup>A</sup>T<sub>E</sub>X or LyX instead MS-Word; Python, octave or R instead of Matlab; inkscape instead of Illustrator, etc.)

Beside the source files also corresponding pdf files have to be submitted. In order to classify the files, an uniform name structure has to be used; thereby following aspects have to be considered:

- Blank spaces (" ") in the naming have to be substituted with "\_" or "-".
- Linguistics (Umlaute) are prohibited for the naming of the files.
- The numbering in labels start with 01 instead of 1.
- For dates the format "yyyy-mm-dd" should be used.
- Vector graphics (e.g.: .pdf, .svg, .eps, ...) are favoured over raster graphics (e.g.: .tif, .jpg, ...).

An example format of the naming structure can be found in the following sections.

The folder structure on the USB stick should represent the structure of the project. Thereby, each folder name should start with a number, in order to get easy a quick overview.

An example project can be downloaded from the institute homepage<sup>1</sup>. Including templates for the: read-me, report, presentation, meeting minutes, figures, tables and sources.

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1. <http://www.im.ibi.ethz.ch/en/education/downloads.html>

### 3.3. Read-me

The read-me file has to be a .txt file with the name "readme.txt", it also has to be located at the first level of the folder structure. The context of this file should give a quick overview of specific information of the project, a short summary, and the structure of the submitted folders.

readme.txt

```
*****
Title of the Work
*****

:Date: September 2014
:Authors: Max Mustermann
:Contact: max@mustermann.ch
:Version: 1.0.2

Summary
=====

A short summary of the of the research described in the document. It states
the problem, the methods of investigation, and the general conclusions, and
should not contain tables, graphs, complex equations, or illustrations. There
is a single abstract for the entire work, and it must not exceed 350 words in
length. The abstract should be given in English language, independent of the
language in which the thesis itself is written.

Structure
=====

IM-Example-Project
|-- 00-Administration
|-- 01-Report
|   '-- tex
|       |-- auto
|       |-- content
|       |-- figures
|       '-- tables
|-- 02-Presentations
|   |-- 01-Interim-yyyy-mm-dd
|   |   '-- tex
|   '-- 02-Final-yyyy-mm-dd
|-- 03-Poster
|   '-- tex
|-- 04-Meetings
|   |-- 01-Meeting-yyyy-mm-dd
|   |   '-- tex
|   |-- 02-Meeting-yyyy-mm-dd
|   '-- 03-Meeting-yyyy-mm-dd
|-- 05-Figures
|-- 06-Tables
|-- 07-Literature
|   |-- Nowak2000_ReliabilityOfStructures
|   '-- Stewart2009_MechanicalBehaviourOf
|-- 08-Developments
|   '-- 01-Matlab
'-- 09-Appendix
```

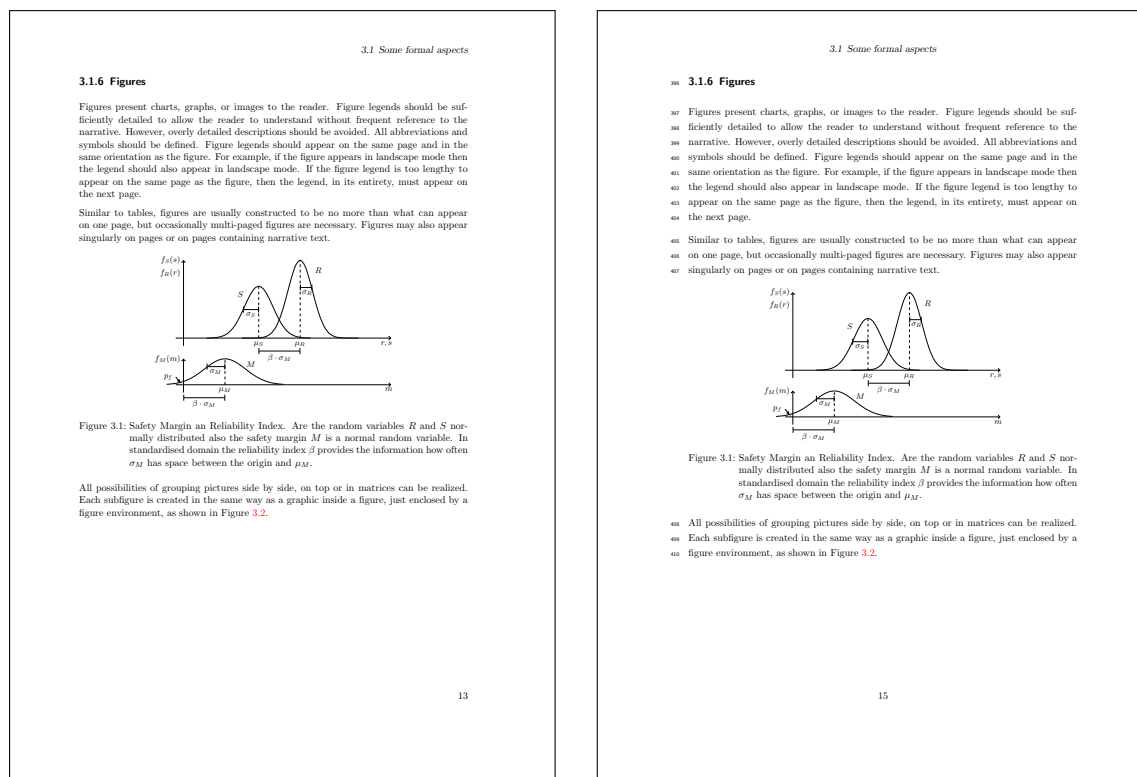
### 3. Submission

## 3.4. Report

The report has to be handed in as a hard copy (printed) and as part of the digital submission. The printed submission should contain two versions:

1. The original bounded report, containing a signed declaration of originality and the appendices, if available. The report has to be printed two sided with single spaced lines. If colored text, figures, tables etc. is included, the whole report has to be printed in color.
2. A second report for proof-reading and grading. Here only the main text has to be included, if desired the report can be printed in black and white. The report has to be printed one sided with a line space of 2.0 and numbered lines.

With permission of the assistant it is possible to omit the proof-reading print version.



(a) Original version

(b) Proof version

Figure 3.1.: Printed Report

For main documents like the report, presentation or poster the following structure should be used:

*Semester Year - Project Type - Surname - Type - Short Title of the Work . format*

FS2014-MScProject-Mustermann-Report-Short Title of the Work.pdf

Try to keep the naming as short as possible, as in some operating systems there is a limit to the file name (64 characters). If needed, use abbreviations!

### 3.5. Poster

The poster has to be submitted in a printed version and digital. The naming convention is similar to the report. Beside the source file also a pdf version should be included.

FS2014-MScProject-Mustermann-Poster-Short\_Title\_of\_the\_Work.pdf

### 3.6. Presentations

The presentations have to be submitted on the USB storage. The naming convention is similar to the report, unless more than one presentation is submitted, then additional the day of the presentation has to be added. Beside the source file also a pdf version should be included.

FS2014-MScProject-Mustermann-Presentation-Short\_Title\_of\_the\_Work-2014-06-06.pdf

### 3.7. Meeting Minutes

Like the presentations, also the meeting minutes have to be submitted digital, with the date of the meeting added to the file name. Beside the source file also a pdf version should be included.

FS2014-MScProject-Mustermann-Minutes-Short\_Title\_of\_the\_Work-2014-06-06.pdf

### 3.8. Figures and Tables

Each figure, table, etc. has to be saved as source file and a vector (.pdf, .svg, .eps) or raster file (.tif, .jpg). The name has to follow the naming convention:

Type - Chapter - Number - Version or sub-figure - Short Name . format

where type describes the type of content with f for figure, t for table, p for plot, c for code. The second entry shows the chapter where this item is located and the number shows the position inside the chapter. This number starts for each new chapter with 01. If a figure is subdivided into different parts, then this version or sub-figure is denoted with an small Latin letter. The short name should represent the content in one word.

f-05-03-a-Titlepage.pdf

### 3.9. Sources

All the literature used in the project has to be saved on the USB stick. Literature taken from books, newspapers, reports, articles, etc. which are not available as pdf, have to be scanned in an appropriate quality. For example, if an equation from a book is used, the related section has to be scanned.

Beside the source file, a bibtex entry has to be created, which contains the reference about the book. Both, source file and bibtex have to be saved in a folder for this reference. The name for the source file, bibtex and folder is the same:

First comes the first author, then the year of publication, and finally the first three words of the title of the work.

```
07-Literature
|-- Nowak2000_ReliabilityOfStructures
|   |-- Nowak2000_ReliabilityOfStructures.bib
|   '-- Nowak2000_ReliabilityOfStructures.pdf
'-- Stewart2009_MechanicalBehaviourOf
    |-- Stewart2009_MechanicalBehaviourOf.bib
    '-- Stewart2009_MechanicalBehaviourOf.pdf
```



## 4. Grading

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### 4.1. Grading System

The credit system of ETH Zürich is based on the European Credit Transfer Systems (ECTS). Credits are assigned to each learning unit according to the expected student workload. One Credit Point requires an average workload of 30 hours of student work (ETHZ 2008a).

ETH Zürich does not use the ECTS Grading Scheme. The grading scale goes from 1.0 to 6.0 in quarter grade (0.25) steps. The pass grade is 4.0, the maximum grade is 6.0. The numerical grades correspond to the following predicates (ETHZ 2008a):

Table 4.1.: ETH Zurich Grades.

Grade	English	German
6.0 - 5.75	excellent	ausgezeichnet
5.5 - 5.25	very good	sehr gut
5.0 - 4.75	good	gut
4.5 - 4.25	satisfactory	befriedigend
4.0	pass	genügend
3.5	fail	ungenügend
3.0	poor	schlecht
2.5	very poor	schlecht bis sehr schlecht
2.0	extremely poor	sehr schlecht
1.0	not measurable	nicht messbar

The above grades are not rigidly related to any distribution function and are not awarded according to predetermined percentages or numerical scores. A student's grade in a subject

#### 4. Grading

is more related to the student's mastery of the material than to the relative performance of his or her peers.

### 4.2. Grade calculation

The grade for a project considers two major parts:

**Deliverables** Under this rubric, all documents which have to be handed in, are listed.

**Results** The project progress and output is graded under this category.

The grade is calculated from the following elements:

Table 4.2.: Grade components

Components
<i>Evaluation of work process</i>
Engagement and initiative
<i>Evaluation of submittals (report-50, poster-10 and presentation-40)</i>
Structure of report
Language in report
Use of citations and references in report
Structure of poster
Appearance of poster
Structure of final presentation
Appearance of slides
Ability to answer questions and defend ideas
<i>Evaluation of content (final report)</i>
Executive Summary / Abstract
Introduction / Background / Theory
Methodology / Implementation (example)
Results
Discussion and conclusion
<i>Overall evaluation of the work by the direct supervisor</i>

### 4.3. Grade-penalization criteria

The following grade-penalization criteria apply to all the projects/thesis done with the Institute:

#### **4.3.1. Orthography**

The report will not be accepted if there are more than 2% mistakes. The mistakes include grammatical errors, improper punctuation, and spelling errors. All the mistakes will be tracked and counted. They will then be divided by the total number of words in the report and the 2% mistakes threshold will be applied. In case your reports exceeds the 2% mistakes threshold, you will be informed as soon as possible by the supervisor of your project/thesis. If you are still within the deadline, you will have the opportunity to resubmit your report. Otherwise the report will be graded as "1".

#### **4.3.2. Unauthorized absence**

If you fail to show up on time or fail to show up at all, with an unjustified cause, at a formal appointments (interim meetings, interim presentation, final presentation), your final grade will be reduced by 1 for every late or no-show case. E.g.: Your overall work has been graded 5.25 but you failed to show up on an interim meeting and arrived late to the interim presentation and you did not justify the cause for no-show and late arrival, then your final grade will be 3.25.

#### **4.3.3. Late submission**

If you fail to hand in your documents at the specified deadline date at latest 16:00 without prior consent to extension of the deadline, your submission will be considered late. For every started 24 hour period after submission deadline, your final grade will be reduced by 0.75. E.g.: If your overall work has been graded 5.25 but you handed in the document on the day after the deadline at 17:00, your final grade will be 3.75.



# 5. Format and Style

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## 5.1. General information

### 5.1.1. Plain text

A single font must be used throughout the thesis or report, the only exceptions being in tables, graphs, and appendices. Headings may be in bold text and no more than 2 points

larger than the rest of the text. Font should be Times New Roman or comparable. Font size is normally 11. The line space for the final version is 1.0 and for the proof-read version is 2.0.

### 5.1.2. Footnotes

For those who are using footnotes<sup>1</sup>, Arabic numerals are used consecutively throughout a chapter, and should normally appear at the bottom of the relevant page, keyed to the same number following the word or phrase in the text to which it refers. If a footnote is too long for the relevant page, it may be continued on the following page preceding the footnotes for that page. If the number of footnotes is very large, numbers may be restarted with each chapter.

### 5.1.3. Lists

There are three types of lists with the environment names *itemize*, *enumerate* and *description*. All lists have a separation between each item, to improve the reading of item texts spanning several lines. This item text can contain multiple paragraphs. These paragraphs are appropriately spaced and indented according to their position in the list.

- The *itemize* sets off list items with *bullets*, like this.
- Of course, lists can be nested, each type up to at least four levels. One type of list can be nested within another type.
  - Nested lists of the same type will change style of numbering or *bullets* as needed.
- 1. The *enumerate* environment numbers the list elements.

This is a new paragraph in the item text, which is not indented as in the normal text but separated from the previous paragraph.
- 2. The enumeration scheme changes with each nesting level
  - a) as shown in this nested enumerated list item.

**Some description** The *description* environment allows to describe some content.

### 5.1.4. Mathematical symbols and equations

Each formula, except for generally accepted and well-known formulas, either has to be mathematically derived, to be explained, or a literature source has to be provided. This applies especially to complex models, where each variable should be described and explained.

There are three types of mathematical equations: (a) in-line equations, (b) displayed unnumbered equations, and (c) displayed and numbered equations.

---

1. Some example footnote.

### In-line equations

An in-line equation is used for particularly simple relationships which (i) do not need vertical space for integrals, fractions, etc., (ii) can be expressed without breaking the flow of the sentence, and (iii) will not be referenced again in the document.

For example:

If volume  $V$  and temperature  $T$  are known, the ideal gas law can be used to get a reasonable approximation for the pressure of a gas as  $P = nRT/V$ , where  $n$  is the number of moles of gas and  $R$  is the gas constant.

Unless all the variables have been defined earlier in the document, the physical significance of all the quantities appearing in an equation must be stated at the point of their first appearance in the document.

### Displayed, but unnumbered equations

Equations that are too complex to be written as in-line equations should be "displayed", which usually means, that the equation is centered between the left and right margins or aligned at a tab stop with some indent from the left margin and some vertical space is provided above and below the equation to set it apart from the text.

For example:

The van der Waals equation is used to provide a more accurate expression for the pressure  $P$  as a function of the molar volume  $V_m$  and the temperature  $T$  as

$$P = \frac{RT}{V_m - b} - \frac{a}{V_m^2} ,$$

where  $a$  and  $b$  are van der Waals parameters for the gas.

or

The electric field  $\mathbf{E}$  at the origin due to a point charge  $q$  at a distance  $r$  is given by

$$\mathbf{E} = \frac{|q|}{4\pi\epsilon_0 r^2} \hat{\mathbf{r}}$$

where  $\hat{\mathbf{r}}$  is the position vector of the point charge.

Note that in the examples presented above, the displayed equation is part of the text, i.e, it is punctuated, and incorporated in to the structure of the sentence.

All the scalar variables are italicized whereas the vector quantities in the second example are Roman boldfaced.

## Displayed and numbered equations

One often has to refer back to the important equations. The standard way to do this is by referring to the equation number. Of course, in order to refer to an equation number, one must first number the equations. A consistent system of numbering equations must be adopted. Various options are:

- Number equations as (1), (2), etc., starting in Chapter 1 (or at the first numbered equation) and continuing until the end of the last numbered equation in the document.
- Incorporate the chapter number into the equation, as in (1.1), (2.3), (4.6), etc., which means the equation numbering goes back to 1 at the beginning of each chapter.
- Use Roman numerals for chapter numbers, as in (I.1), (II.3), (IV.6) etc.

For example:

The non-relativistic Schrödinger equation for a particle of mass  $m$  subject to a potential energy function  $V(x)$  in a one-dimensional universe is

$$E\psi(x) = \frac{-\hbar^2}{2m} \frac{d^2\psi}{dx^2} + V(x)\psi(x) \quad (5.1)$$

where  $\hbar = h/(2\pi)$ ,  $h$  is Planck's constant, and  $E$  is the total energy of the system.

The equation in the example is approximately centered on the page, and the equation number is aligned by a right-tab at the right margin.

To cite an equation in text, use an abbreviation if it is not the first word of the sentence. Suitable singular and plural abbreviations include eq. and eqs., Eq. and Eqs. Spell out "Equation" when it is the first word of a sentence and when it is not accompanied by a number.

The used numbering of the equation may change according to the context of the work. E.g. number them as sub-equations

$$\dot{q}_i = \frac{\partial H}{\partial p_i} \quad (5.2a)$$

$$\dot{p}_i = -\frac{\partial H}{\partial q_i} \quad (5.2b)$$

or with only a single number

$$\begin{aligned} \dot{q}_i &= \frac{\partial H}{\partial p_i} \\ \dot{p}_i &= -\frac{\partial H}{\partial q_i} \end{aligned} \quad (5.3)$$

Many further possibilities of displaying equations exist.



### 5.1.5. Tables

Tables should only be used to present three (3) or more items; otherwise, the data should be described in the narrative. Tables should be arranged so that alike material appears in columns, not rows. Information presented in tables should be sufficiently understandable so frequent reference to the narrative is unnecessary. Each table should have a title, generally appearing above the table itself. The table title and other items may be footnoted, although extensive explanations appearing in footnotes should be avoided. All abbreviations and symbols should be defined.

Tables are generally no more than what can be printed on one page, but occasionally multi-paged tables are necessary and are acceptable. Tables may appear on pages which contain narrative text or tables may appear singularly on a page (i.e. one table per page and only the table on the page).

Table 5.1.: Comparison of the mean-field predictions for the critical temperature of the Ising model with exact results and the best known estimates for different spatial dimensions  $d$  and lattice symmetries.

<b>lattice</b>	$d$	$q$	$T_{\text{mf}}/T_c$
square	2	4	1.763
triangular	2	6	1.648
diamond	3	4	1.479
simple cubic	3	6	1.330
bcc	3	8	1.260
fcc	3	12	1.225

### 5.1.6. Figures

Figures present charts, graphs, or images to the reader. Figure legends should be sufficiently detailed to allow the reader to understand without frequent reference to the narrative. However, overly detailed descriptions should be avoided. All abbreviations and symbols should be defined. Figure legends should appear on the same page and in the same orientation as the figure. For example, if the figure appears in landscape mode then the legend should also appear in landscape mode. If the figure legend is too lengthy to appear on the same page as the figure, then the legend, in its entirety, must appear on the next page.

Similar to tables, figures are usually constructed to be no more than what can appear on one page, but occasionally multi-paged figures are necessary. Figures may also appear singularly on pages or on pages containing narrative text.

All possibilities of grouping pictures side by side, on top or in matrices can be realized. Each sub-figure is created in the same way as a graphic inside a figure, just enclosed by a figure environment, as shown in Figure 5.2.

## 5. Format and Style

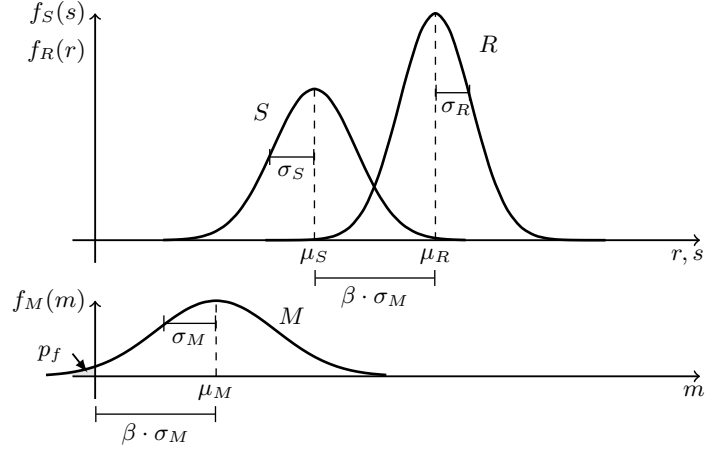


Figure 5.1.: Safety Margin and Reliability Index. Are the random variables  $R$  and  $S$  normally distributed also the safety margin  $M$  is a normal random variable. In standardised domain the reliability index  $\beta$  provides the information how often  $\sigma_M$  has space between the origin and  $\mu_M$ .

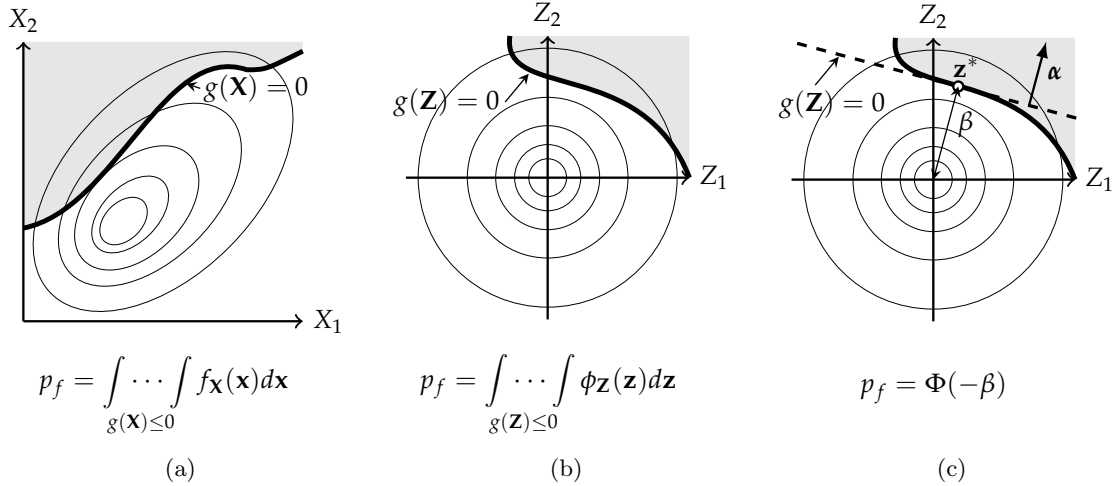


Figure 5.2.: First Order Reliability Method. (a) Representation of a physical space with a set  $\mathbf{X}$  of any two random variables. The shaded area denotes the failure domain and  $g(\mathbf{X}) = 0$  the failure surface. (b) After transformation in the normalized space, the random variables  $\mathbf{Z}$  are now uncorrelated and standardized normally distributed, also the failure surface is transformed into  $g(\mathbf{X}) = 0$ . (c) FORM corresponds to a linearization of the failure surface  $g(\mathbf{X}) = 0$ . Performing this method, the design point  $\mathbf{z}^*$  and the reliability index  $\beta$  can be computed.

## 5.2. Report

The report should follow a certain structure, and be written in the Institute of Construction and Infrastructure Management (IBI) template and graphic profile, see more information at the institute homepage. This section suggests a structure for the different parts in a report.

Table 5.2.: Parts of the Report

Content	Numbering	Required	Section
Title page	none	mandatory	5.2.1
Declaration of originality	none	mandatory	5.2.2
Acknowledgments	roman	as needed	5.2.3
Abstract	roman	mandatory	5.2.4
Zusammenfassung (in German)	roman	mandatory	5.2.5
Table of contents	roman	mandatory	5.2.6
List of figures	roman	mandatory	5.2.7
List of tables	roman	mandatory	5.2.8
List of abbreviations	roman	as needed	5.2.9
Main text	arabic	mandatory	5.2.10
Bibliography	arabic	mandatory	5.2.11
Glossary	arabic	as needed	5.2.12
Index	arabic	as needed	5.2.13
Appendices	arabic	as needed	5.2.14

### 5.2.1. Title page

The first pages shall include specific information. The front page design is important as it tells a lot about the document in hand. Please make sure to include the following information in the title page:

- Type of the Project (e.g. Project or Thesis)
- Title of the Project
- Name of the author(s) and ETH number
- Name of the supervisor(s)
- Date of the final version

## 5. Format and Style

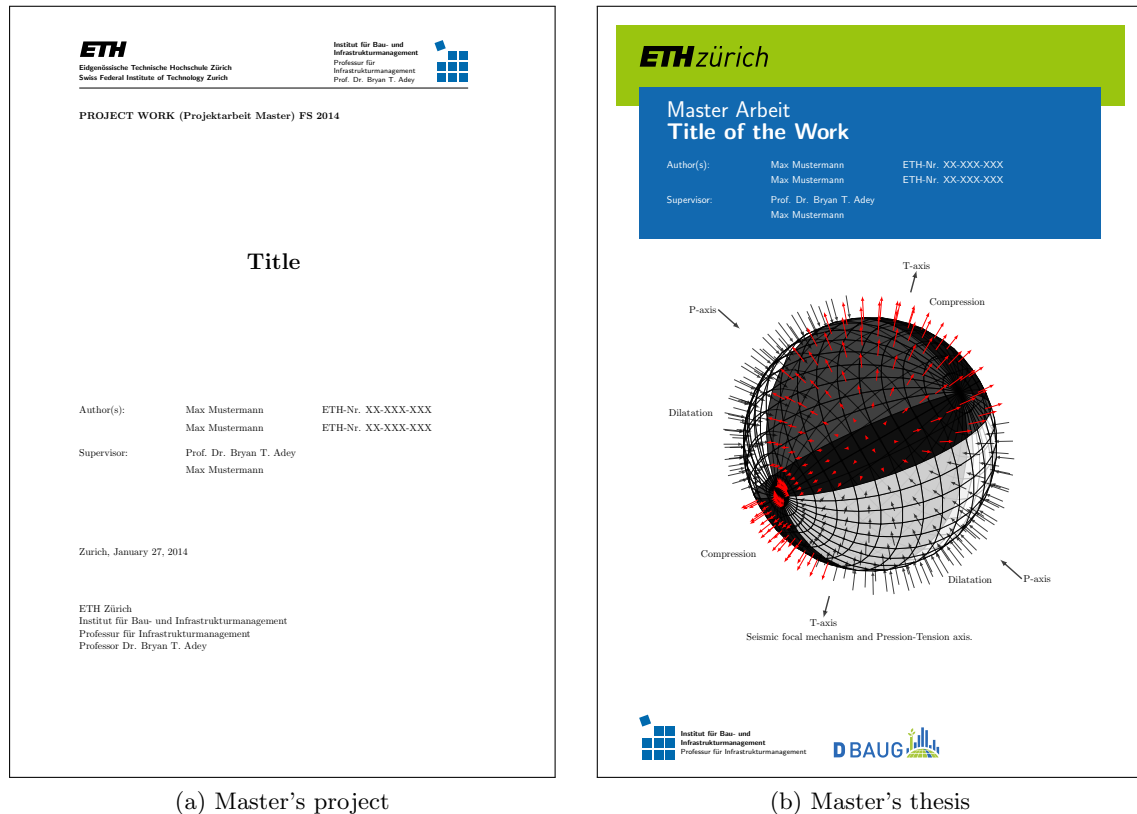


Figure 5.3.: Title pages

### 5.2.2. Declaration of originality

The signed declaration of originality is a component of every semester paper, Bachelor's thesis, Master's thesis and any other degree paper undertaken during the course of studies, including the respective electronic versions.

### 5.2.3. Acknowledgments

Acknowledgements are the author's statement of gratitude to and recognition of the people and institutions that helped the author's research and writing.

For example, the supervisor, other academic and/or technical staff at the university, experts in other institutions who may have provided advice or access to information, funding bodies, colleagues, friends and family. The order of appearance should represent the amount of work the people spent helping/supervising you.

**ETH**  
Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zürich

**Declaration of originality**

The signed declaration of originality is a component of every semester paper, Bachelor's thesis, Master's thesis and any other degree paper undertaken during the course of studies, including the respective electronic versions.

Lecturers may also require a declaration of originality for other written papers compiled for their courses.

I hereby confirm that I am the sole author of the written work here enclosed and that I have compiled it in my own words. Parts excepted are corrections of form and content by the supervisor.

**Title of work** (in block letters):

**Author(s)** (in block letters):  
For papers written by groups the names of all authors are required.

Name(s):	First name(s):
_____	_____
_____	_____
_____	_____
_____	_____

With my signature I confirm that

- I have committed none of the forms of plagiarism described in the "[Citation etiquette](#)" information sheet.
- I have documented all methods, data and processes truthfully.
- I have not manipulated any data.
- I have mentioned all persons who were significant facilitators of the work.

I am aware that the work may be screened electronically for plagiarism.

Place, date	Signature(s)
_____	_____
_____	_____
_____	_____

For papers written by groups the names of all authors are required. Their signatures collectively guarantee the entire content of the written paper.

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Swiss Federal Institute of Technology Zürich

**Eigenständigkeitserklärung**

Die unterzeichnete Eigenständigkeitserklärung ist Bestandteil jeder während des Studiums verfassten Semester-, Bachelor- und Master-Arbeit oder anderen Abschlussarbeit (auch der jeweils elektronischen Version).

Die Dozentinnen und Dozenten können auch für andere bei ihnen verfasste schriftliche Arbeiten eine Eigenständigkeitserklärung verlangen.

Ich bestätige, die vorliegende Arbeit selbständig und in eigenen Worten verfasst zu haben. Davon ausgenommen sind sprachliche und inhaltliche Korrekturvorschläge durch die Betreuer und Betreuerinnen der Arbeit.

**Titel der Arbeit** (in Druckschrift):

**Verfasst von** (in Druckschrift):  
Bei Gruppenarbeiten sind die Namen aller Verfasserinnen und Verfasser erforderlich.

Name(n):	Vorname(n):
_____	_____
_____	_____
_____	_____
_____	_____

Ich bestätige mit meiner Unterschrift:

- Ich habe keine im Merkblatt "[Zitier-Kritique](#)" beschriebene Form des Plagiats begangen.
- Ich habe alle Methoden, Daten und Arbeitsabläufe wahrheitsgetreu dokumentiert.
- Ich habe keine Daten manipuliert.
- Ich habe alle Personen erwähnt, welche die Arbeit wesentlich unterstützt haben.

Ich nehme zur Kenntnis, dass die Arbeit mit elektronischen Hilfsmitteln auf Plagiate überprüft werden kann.

Ort, Datum	Unterschrift(en)
_____	_____
_____	_____
_____	_____

Bei Gruppenarbeiten sind die Namen aller Verfasserinnen und Verfasser erforderlich. Durch die Unterschriften bittet sie gemeinsam für den gesamten Inhalt dieser schriftlichen Arbeit.

(a) English version

(b) German version

Figure 5.4.: Declaration of originality

### 5.2.4. Abstract

The abstract is a concise and accurate summary of the research described in the document. It states the problem, the methods of investigation, and the general conclusions, and should not contain tables, graphs, complex equations, or illustrations. There is a single abstract for the entire work, and it must not exceed 350 words in length.

The abstract should be given in both English and German language, independent of the language in which the thesis itself is written.

### 5.2.5. Zusammenfassung

See Section [5.2.4.](#)

### 5.2.6. Table of contents

All reports are required to use a table of contents. If illustrations such as figures, tables, graphs, slides, maps, diagrams, charts, photos, etc., are scattered throughout the report,

a separate "List of Figures", "List of Illustrations", "List of Tables", etc. is needed to follow the table of contents.

### 5.2.7. List of figures

A list of figures is optional but often included in scholarly works. Should a list of figures or a list of illustrations be included, all figures appearing in the document are required to be listed. Figure legends appearing in the list of figures must appear:

1. exactly as in the figure or
2. in a truncated form in which only the initial portion of the figure legend appears.

If the latter form is followed, the portion of the legend included in the list of figures should be of sufficient length to provide a unique description of the figure and not appear describing another figure in the list of figures. List of figures should be centered, all caps, on the first line of the page; the table should follow.

For example, assume the following legend appears as part of a figure in the document:

Figure 1.1 Two phases service life model for deterioration of a concrete structure due to steel corrosion. The propagation phase includes four points of interest: depassivation, cracking, spalling and collapse. The first three points may be used as limit state. Based on Tuutti (1982).

The two forms appearing in the list of figures could be the following. The first is verbatim and the second is truncated but sufficiently unique so as not to appear again in the list of figures.

Figure 1.1 Two phases service life model for deterioration of a concrete structure due to steel corrosion. The propagation phase includes four points of interest: depassivation, cracking, spalling and collapse. The first three points may be used as limit state. Based on Tuutti (1982) ..... p.

Figure 1.1 Two phases service life model ..... p.

### 5.2.8. List of tables

A list of tables is optional but is often included in scholarly works. Should a list of tables or a list of illustrations be included all tables appearing in the document must be present. Table titles appearing in the list of tables must appear:

1. exactly as in the table or
2. in a truncated form in which only the initial portion of the table title appears.

If the latter form is followed the portion of the title included in the list of tables should be of sufficient length to provide a unique description of the table. List of tables should be centered, all caps, on the first line of the page; the table should follow.

### 5.2.9. List of abbreviations

The author may choose to list abbreviations in the Abbreviations section. If this option is chosen, all abbreviations must be listed in alphabetical order using the format shown in the examples. Abbreviations should be centered, all caps, on the first line of the page; the table should follow. Independent of whether an abbreviations section is used, abbreviations must be defined in the text by enclosing the shortened word in parentheses following the word/ phrase.

Abbreviations are shortened forms of written words or phrases used in place of the whole and should be used to make the document easier to read and understand. Typically, if a large or awkward word or phrase is used 5 or more times, the author should consider using an abbreviation. Often editors encourage use of abbreviations to save space on the printed page, but that is not a concern here. Abbreviations must be denoted immediately after the first occurrence of the word or phrase and must be used for all subsequent occurrences.

### 5.2.10. Main text

#### Introduction

The main text starts with an introduction, an opportunity for you to reflect what you wanted to achieve, what you have achieved and what you want to communicate. To explain this should typically take not so many pages. You simply have to introduce the reader very briefly into your field of research and its significance, lead him to the open problems and questions when you started, sketch the situation you found in the current state. Then formulate the key goals, indicate which potential solutions were anticipated at the beginning and finally indicate very briefly to which main result your efforts have lead you.

#### Basics and theory

Then a chapter with a general description of the field of research follows, usually including the relevant theory. The chapter may be sub-structured in (i) state of research, (ii) theoretical foundations, (iii) specific procedures and methods etc. All fundamental theoretical and experimental tools have to be specified as far as they reflect the knowledge at the beginning of the work. Developments reported later in the literature close to your work should also be included.

In summary, in the theory chapter/section one should gather all formulas and theoretical concepts which are later on used in the thesis - and only these. In any case, one should avoid to generate a scattered collection of formulae distributed over the whole thesis without clear connection.

## 5. *Format and Style*

### **Own work**

Next follows one or more sections about your own work. This is the main content part of your report, and therefore, the structure will be highly depending on your actual project.

### **Results**

After your own work, this section presents the results of your project in a comprehensive and neutral manner, without any discussion.

### **Discussion of the results**

Finally a thorough discussion of the results follows. Here a physical understanding of the observations is to be developed as far as possible - using whenever necessary and illustrative the theoretical framework reported in the earlier chapters. Results of the calculations (measurements) are to be compared (referencing the appropriate formulas and procedures) with it. Results from other sources are to be included into the discussion, both quantitatively and qualitatively. Each discussion should end with a critical evaluation of results obtained.

### **Conclusion and outlook**

This chapter rounds it all up. Here the main results are to be summarized and a few key theses on the progress achieved are presented (quasi as a counterpart to the objectives listed in the introduction). An evaluation of the potential usefulness of these results and finally some perspectives for future possibilities or desirable further developments of the topic will conclude the text.

#### **5.2.11. Bibliography**

A bibliography lists works that students consulted or to which the reader may be referred, while works cited or reference list cites works in the report. The format of the references and/or bibliography should follow one of the styles mentioned in **chapter 6**. Do not depersonalize non-primary authors by referring to them in the bibliography as et al.!

#### **5.2.12. Glossary**

A glossary is an alphabetical list of terms in a particular domain of knowledge with the definitions for those terms. Traditionally, a glossary appears at the end of the report and includes terms within that report that are either newly introduced, uncommon, or specialized.



### 5.2.13. Index

An index is a list of words or phrases (headings) and associated pointers to where useful material relating to that heading can be found in the report. In a traditional back-of-the-book index the headings will include names of methods, names, events, and concepts selected by the author as being relevant and of interest to a possible reader of the report. The pointers are typically page numbers, paragraph numbers or section numbers.

### 5.2.14. Appendices

Appendices must be limited to supporting material genuinely subsidiary to the main argument of the work. They must only include material that is referred to in the document.

Material suitable for inclusion in appendices includes the following:

- Additional details of methodology and/or data
- Sophisticated computer codes developed by the author
- Diagrams of specialized equipment developed
- Copies of questionnaires or surveys used in the research
- ...

## 5.3. Presentation

Giving a formal presentation or talk is not easy. Two sets of helpful guidelines and suggestions are given in the appendix; one for preparing the slides and one for the actual talk, based on Saiedian (2003).

## 5.4. Poster

As with all communication, which is an art form, there is also no single recipe for a successful poster. Block (1996) offers advice on preparing a good scientific poster, which can be found in the appendix. The order of the naming of the supervisors should reflect the amount of time the persons spent with you. (e.g the assistant before the professor, if you spent more time with the assistant than the professor)

## 5.5. Meetings

Meetings are tools for accomplishing work. The work to be done can include decision making, information gathering or problem solving. A template for meeting minutes is provided on the institute homepage.



# 6. Citation

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As indicated in Section 3.1, the reports will be automatically screened for plagiarism using a plagiarism detection software. It is therefore highly recommended to properly cite all work following the indications in this chapter. If you have any questions or concerns about plagiarism or proper citation do not hesitate to contact your project or thesis supervisor.

## 6.1. Acceptable Use

Academic work almost always builds upon the work of others, and it is appropriate, indeed essential, that you discuss the related and previous work of others in your thesis. However, this must be done according to the rules of acceptable use (ETHZ 2007). The actual rules can be found in the “Citation Etiquette” of ETH, online available [here](#).

### 6.1.1. Paraphrasing

Paraphrasing means closely summarising and restating the ideas of another person, but in your own words. When doing a literature survey, you will generally want to paraphrase (parts of) each relevant paper or source.

Whenever you paraphrase someone else’s ideas, you must cite the original source!

### 6.1.2. Quoting Text

In some circumstances, you may want to directly quote small parts of text (typically up to a few paragraphs) from a relevant source. When quoting, you copy exactly the words, spelling, and punctuation of the original and enclose the passage in quotation marks.

“Do not worry about our difficulties in mathematics, I assure you that mine are greater.”  
(Albert Einstein)

If you quote someone else’s words, you must cite the original source!

Often, as part of a literature survey of related work, you will want to use photographs, diagrams, or tables taken from the internet or from another work. Regardless of whether you have obtained permission from the copyright holder or are using the fair use provisions of your country’s copyright law: if you use someone else’s images, academic integrity dictates that you must cite the original source!

## 6.2. Referencing

The Chicago Manual of Style<sup>1</sup>, implemented here in its 16th edition, has long, been one of the most influential style guides for writers and publishers. While one’s choices are now perhaps more extensive than ever, the Manual at least still provides a widely-recognized, and widely-utilized, standard.

### 6.2.1. Books

Much of the advice in the section on books will pertain to other sources as well. Their long history as a formal publication ensures, in particular, that the variations in author names and titles will serve as a model for constructing documentary notes and bibliography entries for many other types of sources.

A full reference must include enough information to enable an interested reader to locate the book. Most references contain at least some information not strictly needed for that purpose but potentially helpful nonetheless. The elements listed below are included, where applicable, in full documentary notes and bibliography entries. The order in which they appear will vary slightly according to type of book, and certain elements are sometimes omitted; such variation will be noted and illustrated in the course of this chapter.

1. Author: full name of author(s) or editor(s) or, if no author or editor is listed, name of institution standing in their place
2. Title: full title of the book, including subtitle if there is one
3. Editor, compiler, or translator, if any, if listed on title page in addition to author
4. Edition, if not the first

---

1. (Chicago Press 2010)

5. Volume: total number of volumes if multivolume work is referred to as a whole; individual number if single volume of multivolume work is cited, and title of individual volume if applicable
6. Series title if applicable, and volume number within series if series is numbered
7. Facts of publication: city, publisher, and date
8. Page number or numbers if applicable
9. For electronic books consulted online, a URL or DOI, or, for other types of electronic books, an
10. indication of the medium consulted (e.g., DVD, CD-ROM);

In a note, the author's name is given in the normal order. In a bibliography, where names are arranged alphabetically, it is inverted (last name first).

The author appears as part of the narrative: Shotton (1989)

Otherwise, in parentheses: (Shotton 1989)

Shotton, M. A. 1989. *Computer Addiction? A Study of Computer Dependency*. London, England: Taylor & Francis.

Two or three authors (or editors) of the same work are listed in the order used on the title page. In a bibliography, only the first author's name is inverted, and a comma must appear both before and after the first author's given name or initials. Use the conjunction and (not an ampersand).

The author appears as part of the narrative: Madsen, Krenk, and Lind (2006)

Otherwise, in parentheses: (Madsen, Krenk, and Lind 2006)

Madsen, H. O., S. Krenk, and N. C. Lind. 2006. *Methods of Structural Safety*. Mineola, NY: Dover Publications. ISBN: 9780486445977.

For works by or edited by four to ten persons, all names are usually given in the bibliography. Word order and punctuation are the same as for two or three authors. In a note, only the name of the first author is included, followed by et al. with no intervening comma.

The author appears as part of the narrative: Bertolini et al. (2004)

Otherwise, in parentheses: (Bertolini et al. 2004)

Bertolini, L., B. Elsener, P. Pedferri, and R. B. Polder. 2004. *Corrosion of steel in concrete : prevention, diagnosis, repair*. XVII, 392. Weinheim: Wiley-VCH. ISBN: 9783527308002.

When a specific chapter (or other titled part of a book) is cited in the notes, the author's name is followed by the title of the chapter (or other part), followed by in, followed by the title of the book. The chapter title is enclosed in quotation marks. Either the inclusive page numbers or the chapter or part number is usually given also. In the bibliography, either the chapter or the book may be listed first

## 6. Citation

The author appears as part of the narrative: Strong and Uhrbrock (1923)

Otherwise, in parentheses: (Strong and Uhrbrock 1923)

Strong, E. K., Jr., and R. S. Uhrbrock. 1923. "Bibliography in Job Analysis." In *Personnel Research Series: Vol. 1. Job Analysis and the Curriculum*, edited by L. Outhwaite, 140–146. doi:[10.1037/10762-000](https://doi.org/10.1037/10762-000).

### 6.2.2. Articles

The word article is used here to include scholarly and professional journals, popular magazines, and newspapers. Articles are far more likely than books to be consulted in electronic form. Except for the addition of a URL or DOI, the citation of an online article is the same as that recommended for printed article.

Citations of periodicals require some or all of the following data:

1. Full name(s) of author or authors
2. Title and subtitle of article or column
3. Title of periodical (e.g. journal or magazine)
4. Issue information (volume, issue number, date, etc.)
5. Page reference (where appropriate)
6. For online articles, a URL or, if available, a DOI

Indispensable for newspapers and most magazines is the specific date (month, day, and year). For journals, the volume and year plus the month or issue number are usually cited. Additional data make location easier.

Authors' names are normally given as they appear at the heads of their articles. Titles of articles are set in roman; they are usually capitalized headline-style and put in quotation marks. As with a book, title and subtitle are separated by a colon.

Most journal citations include volume, issue number or month, and year. The volume number, set in roman, follows the title without intervening punctuation; arabic numerals are used even if the journal itself uses roman numerals. The issue number may be omitted if pagination is continuous throughout a volume or when a month or season precedes the year.

Many of the examples in this section include a URL or a DOI at the end of the citation. A DOI, if it is available, is preferable to a URL. If using a URL, use the address that appears in your browser's address bar when viewing the article (or the abstract) unless a shorter, more stable form of the URL is offered along with the electronic article. Note that a single DOI assigned to a journal article as a whole applies to that article in any medium, print or electronic. Nonetheless, unless their publisher or discipline requires otherwise, authors need only include an article's DOI to indicate that an electronic version was cited.

The author appears as part of the narrative: Gilbert et al. (2004) and Sillick and Schutte (2006)

Otherwise, in parentheses: (Gilbert et al. 2004; Sillick and Schutte 2006)

Gilbert, D. G., J. F. McClernon, N. E. Rabinovich, C. Sugai, L. C. Plath, G. Asgaard, D. Dickinson, and N. Botros. 2004. "Effects of Quitting Smoking and EEG Activation and Attention Last for More Than 31 Days and are More Severe With Stress, Dependence, DRD2 A1 Allele, and Depressive Traits." *Nicotine and Tobacco Research* 6:249–267. doi:10.1080/14622200410001676305.

Sillick, T. J., and N. S. Schutte. 2006. "Emotional Intelligence and Self-esteem Mediate Between Perceived Early Parental Love and Adult Happiness." *E-Journal of Applied Psychology* 2 (2): 38–48. <http://ojs.lib.swin.edu.au/index.php/ejap>.

### 6.2.3. Newspapers

The name of the author (if known) and the headline or column heading in a daily newspaper are cited much like the corresponding elements in magazines. The month (often abbreviated), day, and year are the indispensable elements. Because a newspaper's issue of any given day may include several editions, and items may be moved or eliminated in various editions, page numbers may usually be omitted (for an example of a page number in a citation).

If the paper is published in several sections, the section number or name may be given (e.g., sec. 1). To cite an article consulted online, include the URL; in some cases, it may be advisable to shorten a particularly unwieldy URL to end after the first single forward slash (i.e., the slash that follows a domain extension such as .com).

The author appears as part of the narrative: Brody (2007)

Otherwise, in parentheses: (Brody 2007)

Brody, J. E. 2007. "Mental Reserves Keep Brain Agile." *The New York Times* (December 11). <http://www.nytimes.com>.

### 6.2.4. Interviews and Personal Communications

In whatever form interviews or personal communications exist—published, broadcast, preserved in audiovisual form, available online—the citation normally begins with the name of the person interviewed or the person from whom the communication was received. The interviewer or recipient, if mentioned, comes second.

Unpublished interviews are best cited in text or in notes, though they occasionally appear in bibliographies. Citations should include the names of both the person interviewed and the interviewer; brief identifying information, if appropriate; the place or date of the interview (or both, if known); and, if a transcript or recording is available, where it may be found. Permission to quote may be needed;

## 6. Citation

The author appears as part of the narrative: Smith (1989)

Otherwise, in parentheses: (Smith 1989)

Smith, M. B. 1989. *Interview by C. A. Kiesler*. President's Oral History Project, American Psychological Association. Tape Recording, APA Archives, Washington, DC, August 12.

References to conversations (whether face-to-face or by telephone) or to letters, e-mail or text messages, and the like received by the author are usually run in to the text or given in a note. They are rarely listed in a bibliography.

An e-mail address belonging to an individual should be omitted. Should it be needed in a specific context, it must be cited only with the permission of its owner.

### 6.2.5. Theses and Dissertations

The kind of thesis, the academic institution, and the date follow the title. Like the publication data of a book, these are enclosed in parentheses in a note but not in a bibliography. If the document was consulted online, include a URL or, for documents retrieved from a commercial database, give the name of the database and, in parentheses, any identification number supplied or recommended by the database.

The author appears as part of the narrative: McNiel (2006) and Carlbom (2000)

Otherwise, in parentheses: (McNiel 2006; Carlbom 2000)

Carlbon, P. 2000. "Carbody and Passengers in Rail Vehicle Dynamics." Doctoral thesis, Royal Institute of Technology, Stockholm. <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-3029>.

McNiel, D. S. 2006. "Meaning Through Narrative: A Personal Narrative Discussing Growing Up with an Alcoholic Mother." Available from ProQuest Dissertations and Theses database. Master's thesis. UMI No. 1434728.

### 6.2.6. Websites and Blogs

For the purposes of this discussion, website refers to the collection of documents made available at a specific location on the World Wide Web by an individual or organization. (The term web page, on the other hand, is used to refer to any one of the "pages," or subdocuments, that can be viewed within a website.) Formal citations should normally be limited to the documents themselves—for example, the articles, books, and other published documents offered by the websites of university publishers and other formal organizations and discussed elsewhere in this chapter. A weblog—or blog—is a category of website that has evolved to include a few more or less standard components, including dated entries and dated comments. Citations of blog entries and comments are therefore similar to citations of articles.

Websites should be referred to in text and notes by specific title (if any), by the name of the sponsor or author, or by a descriptive phrase. Some sites refer to themselves by



their domain name (the first part of a URL, following the double slash and ending in a domain-type indication such as .com, .edu, or .org); such monikers, which are not case sensitive, are often shortened and capitalized in a logical way (e.g., www.nytimes.com becomes NYTimes.com; www.google.com becomes Google). Titles of websites are generally set in roman without quotation marks and capitalized headline-style, but titles that are analogous to books or other types of publications may be styled accordingly. Titled sections or pages within a website should be placed in quotation marks. Specific titles of blogs—which are analogous to periodicals—should be set in italics; titles of blog entries (analogous to articles in a periodical) should be in quotation marks.

The author appears as part of the narrative: MiddleKid (2007) and “Mission, Vision & Values” (2011)

Otherwise, in parentheses: (MiddleKid 2007; “Mission, Vision & Values” 2011)

MiddleKid. 2007. “Re: The Unfortunate Prerequisites and Consequences of Partitioning Your Mind.” Web log comment. January 22. [http://scienceblogs.com/pharyngula/2007/01/the\\_unfortunate\\_prerequisites.php](http://scienceblogs.com/pharyngula/2007/01/the_unfortunate_prerequisites.php).

“Mission, Vision & Values.” 2011. Twin Cities Habitat for Humanity website. Accessed September 2011. <http://www.tchabitat.org/missionvisionvalues>.

### 6.2.7. Citations Taken from Secondary Sources

To cite a source from a secondary source (“quoted in . . .”) is generally to be discouraged, since authors are expected to have examined the works they cite. If an original source is unavailable, however, both the original and the secondary source must be listed.

### 6.2.8. Standards

Standard example: ISO 13586:2000(E)

ISO 13586:2000(E). 2000. *Plastics – Determination of fracture toughness ( $G_{IC}$  and  $K_{IC}$ ) – Linear elastic fracture mechanics (LEFM) approach*. Standard. Geneva, CH: International Organization for Standardization, March.

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- Saiedian, H. 2003. *Guidelines and Suggestions for Making a Good Presentation*. Online. Kansas.

# A. Checklist

The following checklist items should be used to ensure your document is properly formatted prior to submission. These items will be reviewed by staff at IBI and your document will not be accepted until all items are confirmed.

- ☐ You have read and addressed all sections in the “Leitfaden für Bachelor- und Masterarbeiten sowie Projektarbeiten in Bachelor- und Masterstudiengängen am Institut für Bau- und Infrastrukturmanagement” (IBI Guidelines)
- ☐ You have read, completely filled out and included it in the final report the “**Declaration of originality**” (Appendix B). In groups, all group members have to sign it
- ☐ You have read, signed and provided the “Erklärung zur Anwendungsbeschränkung von projektbezogenen Unterlagen” (Appendix B). In groups, all group members have to sign it
- ☐ You have read the “**Citation etiquette**”
- ☐ You have gone over the “Citation check” included in the “Citation etiquette” (2nd page) and addressed all the items required to your project.
- ☐ You have included the citations/references following the recommended citation style provided by IBI (see chapter 6 from the IBI Guidelines for more information.)
- \* You are submitting the following materials (see chapter 3 from the IBI Guidelines for more information. In case of conflict the IBI Guidelines prevail, in that case contact your project supervisor)
  - Hard copies of the complete work. This includes:
    - ☐ Two (2) hard copies of the report, including appendices and items 2 and 3 above (fully bounded), except the assistant gave permission to hand in the proof version digitally only.
    - ☐ One (1) hard copy of the final presentation (fully bounded)
    - ☐ One (1) hard copy of the poster (A0 size)
  - An electronic copy of the entire work. This includes:
    - ☐ A ”read me” file indicating the structure/content/explanation of the files provided
    - ☐ The report, including appendices, in PDF format as well as in the source format (e.g., .doc, .docx, .tex or .lyx)

## A. Checklist

- ☐ The presentation in PDF format as well as in the source format (e.g., .tex, .ppt, .pptx)
- ☐ The poster in PDF format as well as in the source format (e.g., .tex, .ppt, .pptx, .indd, .vsdx)
- ☐ Each image, table, etc. provided as a separate file in the original format (tex, .xls, .mpp, .ppt) and as an image file in a common graphics format (e.g., .pdf, .tif, .jpg)
- ☐ The code in the source format (e.g., .py, .m, .xslm) and (if applicable) an explanation of the different modules and their functions
- ☐ The spreadsheets used in the source format (e.g., .xls) and (if applicable) an explanation of the content in the different tabs
- ☐ The last version of the approved meeting minutes in the source format and as pdf file.
- ☐ All the electronic files have been saved using the specified naming structure (e.g., FS2014-MScProject-Mustermann-Report-Project\_A.pdf or f-05-03-Reprofilierung.tif)

If you can successfully check the boxes shown above (if applicable to your project) you have everything needed to submit your project to the corresponding IBI group. If you have any questions contact your project supervisor.

## **B. Forms**





Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

## Declaration of originality

The signed declaration of originality is a component of every semester paper, Bachelor's thesis, Master's thesis and any other degree paper undertaken during the course of studies, including the respective electronic versions.

Lecturers may also require a declaration of originality for other written papers compiled for their courses.

I hereby confirm that I am the sole author of the written work here enclosed and that I have compiled it in my own words. Parts excepted are corrections of form and content by the supervisor.

**Title of work** (in block letters):

**Authored by** (in block letters):

*For papers written by groups the names of all authors are required.*

**Name(s):**

**First name(s):**


With my signature I confirm that

- I have committed none of the forms of plagiarism described in the '[Citation etiquette](#)' information sheet.
- I have documented all methods, data and processes truthfully.
- I have not manipulated any data.
- I have mentioned all persons who were significant facilitators of the work.

I am aware that the work may be screened electronically for plagiarism.

**Place, date**

**Signature(s)**


*For papers written by groups the names of all authors are required. Their signatures collectively guarantee the entire content of the written paper.*







Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

## Eigenständigkeitserklärung

Die unterzeichnete Eigenständigkeitserklärung ist Bestandteil jeder während des Studiums verfassten Semester-, Bachelor- und Master-Arbeit oder anderen Abschlussarbeit (auch der jeweils elektronischen Version).

Die Dozentinnen und Dozenten können auch für andere bei ihnen verfasste schriftliche Arbeiten eine Eigenständigkeitserklärung verlangen.

Ich bestätige, die vorliegende Arbeit selbständig und in eigenen Worten verfasst zu haben. Davon ausgenommen sind sprachliche und inhaltliche Korrekturvorschläge durch die Betreuer und Betreuerinnen der Arbeit.

**Titel der Arbeit** (in Druckschrift):

**Verfasst von** (in Druckschrift):

*Bei Gruppenarbeiten sind die Namen aller Verfasserinnen und Verfasser erforderlich.*

**Name(n):**

**Vorname(n):**

Ich bestätige mit meiner Unterschrift:

- Ich habe keine im Merkblatt „[Zitier-Knigge](#)“ beschriebene Form des Plagiats begangen.
- Ich habe alle Methoden, Daten und Arbeitsabläufe wahrheitsgetreu dokumentiert.
- Ich habe keine Daten manipuliert.
- Ich habe alle Personen erwähnt, welche die Arbeit wesentlich unterstützt haben.

Ich nehme zur Kenntnis, dass die Arbeit mit elektronischen Hilfsmitteln auf Plagiate überprüft werden kann.

**Ort, Datum**

**Unterschrift(en)**

*Bei Gruppenarbeiten sind die Namen aller Verfasserinnen und Verfasser erforderlich. Durch die Unterschriften bürgen sie gemeinsam für den gesamten Inhalt dieser schriftlichen Arbeit.*





## Statement about Project Specific Materials

I (We) understand that the Project Specific Materials that have been provided to me (us) (e.g., materials made available by external supervisors related to the technical aspects of the project; data specific to the project; drawings; calculations, etc.) are considered confidential and intended to be used by me (us) for the purposes of my (our) Project with the IMG only. I (We) shall not distribute these materials to third parties or use them after the completion of this Project without prior written consent from the IMG.

**Name of the project:**

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**Semester:** HS ☐ FS ☐ **Year:** \_\_\_\_\_

**Name and signature of the student(s\*):**

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**Place and date:** \_\_\_\_\_

\*In group projects, the name and signature of all group members are required.





## Erklärung zur Anwendungsbeschränkung von projektbezogenen Unterlagen

Ich (wir) verstehe(n), dass die projektbezogenen Unterlagen, welche mir (uns) zur Verfügung gestellt wurden (z.B. Material welches von externen Betreuungspersonen im Zusammenhang mit den technischen Aspekten des Projekts zugänglich gemacht wurde, projektspezifische Daten, Graphiken, Kalkulationen, etc.) vertraulich zu behandeln sind und nur für meine (unsere) Verwendung im Zusammenhang mit meinem (unserem) Projekt mit dem Institut für Bau- und Infrastruktur (IBI) bestimmt sind. Ich (wir) darf (dürfen) das Material weder ganz noch auszugsweise in irgendeiner Form an Drittparteien weitergeben oder dieses nach Beendigung des Projekts ohne ausdrückliche Bewilligung des IBI weiterverwenden.

**Name des Projekts:**

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**Semester:** HS ☐ FS ☐ **Jahr:** \_\_\_\_\_

**Name und Unterschrift des (der) Studierenden\*:**

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**Ort und Datum:** \_\_\_\_\_

\*Bei Gruppenprojekten ist der Name und die Unterschrift von allen Gruppenmitgliedern erforderlich



## C. Presentation, Poster & Meetings

### C.1. Presentation

Giving a formal presentation or talk is not easy. Below, two sets of helpful guidelines and suggestions are given in the appendix; one for preparing the slides and one for the actual talk, based on Saiedian (2003).

#### C.1.1. Preparing the Presentation Slides

Use the provided template from the Institute of Construction and Infrastructure Management (IBI), either for L<sup>A</sup>T<sub>E</sub>X or PowerPoint.

Start with a "title" slide (to introduce yourself and your talk), followed by a "contents" (or "organization") slide to give an outline of your talk.

Take advantage of the available itemization features and fonts sizes to distinguish levels of text in your slides. Normally,

- First-level "bullet" begins with an upper-case letter
  - Second-level text (normally a hyphen) may start with an upper-case or lower-case letter (but it is important maintain consistency; if it wraps, it should align under the text not the bullet)
    - \* third-level text indents further to the right, normally begins with a different symbol, and begins with a lower case. Three levels of text is normally sufficient.

Enumerate (instead of using bullets or hyphens) only when you have a good reason to do so (e.g., to emphasize the order or refer to the items by their number). When you enumerate, it is best to use Arabic numerals.

Make all itemized (or enumerated) items parallel, i.e., begin them with the same part of speech (e.g., noun, or verb) and make them same type of items (normally, a phrase).

Every slide should have a descriptive, focused, non-repetitive header.

Maintain consistency among all slides (template, font types, font color, and font sizes used in the slides). Use color and other word-processor features properly to enhance your slides; be aware that un-coordinated uses of these features can cause a distraction.

Limit the amount of information that appears on one slide; only put the items that you would like the audience to read. Showing a slide for a fraction of second is not very helpful.

Slides should not repeat what you have to say; they should supplement your presentation.

Be sure to have slide numbers on all slides (perhaps with the exception of the title slide).

### **C.1.2. Giving the Presentation**

The presentation marks one important step of your project, where you should present, but also advertise the work you have done. So, before going into the details of the presentation, consider the following recommendations:

- Introduce yourself! Not everybody in the room will know who you are.
- Do not read from the slides!
- Sell your work! If you for yourself are not convinced of what you are doing, who else should be?
- Do not show screenshots of pages from your report.

The presentation should be well-organized: it must have an introduction, a main body, and conclusion(s). The organization should be made clear to the audience.

Tell your audience what you are going to tell them, then tell them, then tell them what you told them. Your first slide should have your name and the title of your talk. The very next slide should be an outline of your talk. Then you can have the slides for the rest of your talk, but let the audience know where you are in the talk at each main point. You can do this by putting up the outline slide again and/or by saying something like “Going on to point number three....” The last slide before your conclusion should contain a summary of your main points. You might be able to use your outline slide again here.

The presentation must be focused and the topic should be covered adequately in the time allotted. The answers afterward, if any, should be brief and relevant to the topic; you must be willing to say, “I don’t know.”

Do not make your talk so broad that you can cover only the simplest concepts in 20 minutes. Carefully practice your talk so that you know that you can cover the topic in the time allotted. You are not expected to know everything about your topic, so do not be embarrassed to say, “I don’t know.” This is better than trying to fake an answer.

The talk must be presented at a level understandable to the audience; it should be neither too complicated nor too simple.

Know your audience. Remember that you are talking to a specific group of people with specific background. This group at the university may mostly be composed of



EECS (graduate) students and faculty. You can expect your audience to know a lot about different parts of computing sciences, but maybe not a lot about your particular topic. Do not talk at such a shallow level that your audience will already know almost everything you are saying. Also, do not give a talk that assumes a level of knowledge of the subject that most of your audience does not have.

You should be well-prepared and organized; you must rehearse your talk before presenting it to the audience.

Using overheads or a computerized presentation is good evidence that you have prepared and organized your talk. Practice giving your talk to another person once or twice; have them time you and signal you when your time is running short.

You should present yourself well. Dress properly, be relaxed, cheerful, and enthusiastic.

It turns out that people are more willing to listen to and accept a speaker's message when they perceive the speaker as a professional. To show your audience that you are a professional, dress like a conventional member of your profession.

Convey a cheerful and enthusiastic attitude. If you act bored with your material, the audience will be bored also. If you are excited about your topic, the audience is likely to become more interested. If you are relaxed and at ease with your topic, the audience will think that you have a thorough understanding of it, and will be more willing to accept what you have to say.

You should have good audience rapport; face the audience, have good eye contact, and be alert and receptive to feedback from the audience.

Your assignment is not to give a speech to an audience but to talk to individual people about a topic that is of interest to you and that you know more about than they do. Look at and talk to individual people in the audience. Do not talk to or look at the projector, the screen, your notes, the floor, the back wall, etc. Your talk is greatly improved if the audience recognize that you are talking to them rather than talking at them. Look at and talk to one person, then another, then another, and so on. Move around a bit to make sure that you talk to people in different parts of the room. Pay attention to audience feedback. A hand cupped behind the ear means, "Speak up!" A head resting on the table means, "This talk is boring." Someone scratching their head in puzzlement may mean that they are not understanding you very well. Adjust what you are saying and how you are saying it to adapt to this feedback.

You should speak loudly and clearly.

If the audience can't hear you, they won't be able to get anything out of your talk. You may have to speak more loudly than you normally do in order to be heard. Ask a friend in the class to signal you if you aren't talking loudly enough.

Control your voice.

Avoid speaking in a monotone; avoid hype; avoid information-free utterances ("um"). Project energy and vitality without being hyperactive and too excited.

Vary your tone of voice to emphasize your points. If you talk in a monotone, your audience will quickly become bored. Avoid mumbling; enunciate your words clearly

### *C. Presentation, Poster & Meetings*

and distinctly. If you are a non-native speaker of English, try to make sure you are pronouncing the words properly.

You should maintain an even speaking pace, without rushing or dragging.

A pace that is too slow bores the audience and puts them to sleep. A pace that is too fast confuses the audience. Be especially careful not to start off too slowly, which will force you to rush at the end. Don't memorize your talk; if you do, you will have a tendency to rush through it.

Audio/visual aids (electronic media, slides, transparencies, illustrations, demonstrations, etc.) should be used effectively.

PowerPoint-like slides and AV aids should enhance your talk, not distract people from it. Your audience will tend to look at the screen (the brightest thing in the room) even when it is blank. So avoid having a blank screen for more than a second or two. The audience will also read everything on each slide, so avoid putting more than one main point (in just a few words) on each slide. Make the print large enough so that everyone can easily read it. Do not put everything that you plan to say on your slides, and do not read your slides to your audience.

Color can be useful in emphasizing points or illustrating the organization of your talk. But indiscriminate use of color is distracting. Avoid busy backgrounds and cluttered slides with too much stuff on them.

Prepare the room for your talk beforehand: close the blinds, turn off the lights, adjust the screen, etc. Arrive early enough to check out the projector, adjust the focus, and position the projector correctly.

The presentation should end with a list of credits (references or bibliography items).

Your talk should end with the bibliography and a call for questions. List only your three or four best (or most accessible) references. Use a large font.

You should complete the presentation within the allowed time (normally 15–20 minutes), leaving a few minutes for questions.

The talk itself should take 15-20 minutes, leaving a few minutes afterward for questions, plus a few minutes for the next speaker to come up to the front of the room. If your talk is under 15 minutes, then you have not made adequate use of the time available. If your talk goes on for more than 25 minutes, you risk being cut off in mid-sentence by the talk moderator. It may be considered rude to overrun time, and may compress others' talk, or make everyone late.

## **C.2. Poster**

Block (1996) offers advice on preparing a good scientific poster. As with all communication, which is an art form, there is no single recipe for success. There are many alternative, creative ways to display and convey scientific information pictorially. Occasionally, breaking with tradition can pay off, but not always.

### C.2.1. Poster Layout and Format

Keep your title short, snappy, and on target. The title needs to highlight your subject matter, but need not state all your conclusions, after all. Some good titles simply ask questions. Others answer them.

Make your title large enough to be read easily from a considerable distance (say, 8-10 meter), so it will perforce span more than one printed page. Nevertheless, the title should never exceed the width of your poster area (particularly if you are sharing half a poster-board with a neighbor!), nor should it ever occupy more than two lines. If things don't fit, shorten the title ; don't reduce the typesize. And remember that titles in all capital letters are harder to read.

Put the names of all authors and institutional affiliations just below (or next to) your title. It's a nice touch to supply first names rather than initials. Don't use the same large type size as you did for the title; use something smaller and more discreet.

Don't use too small a typesize for your poster. This is the single most common error. Never, ever, use 10- or 12-point type. Don't use it in your text, anywhere. Don't use it for captions. Don't use it for figure legends, and annotations, footnotes, subscripts, or anything else. Don't ever use small type on a poster. Remember, no one ever complained that someone's poster was too easy to read.

Use a typesize that can be read easily at a distance of around 1.5 meter or better. Think of 14-point type as being suitable only for the fine print and work your way up, (never down) from there. For text, 20-point type is about right (18 point in a pinch). Not enough space to fit all your text? Then shorten your text!

Don't pick a font that's a pain to read. Please, don't get too creative in your typeface selections. Less obvious is the fact that sans-serif fonts, Helvetica being the most common offender, are more difficult to read, and certain letters are ambiguous (for example, the lowercase l and upper case I may look alike). Serifs help guide the eye along the line and have been shown in numerous studies to improve both readability and comprehension. Equally hard to read are most monospaced fonts such as Courier. Generally speaking, it's better to leave Helvetica to Cell Press, reserving its use in posters for short text items such as titles and graph labels, and Courier to your aging type-writer, reserving its use in posters for nucleotide sequence alignments and suchlike.

Design your poster as if you were designing the layout for a magazine or newspaper. Select fonts and sizes that work together well. Strive for consistency, uniformity, and a clean, readable look.

Lay out the poster segments in a logical order, so that reading proceeds in some kind of linear fashion from one segment to the next, moving sequentially in a raster pattern. The best way to set up this pattern is columnar format, so the reader proceeds vertically first, from top to bottom, then left to right. This has the advantage that several people can be all reading your poster at the same time, walking through it from left to right, without having to exchange places. Consider numbering your individual poster pieces (1, 2, 3,... ) so that the reading sequence is obvious to all. And always make sure that all figure legends are located immediately adjacent to the relevant figures.

Use colors in your poster, and always try to use them in a way that helps to convey additional meaning. For color borders, select something that draws attention but doesn't overwhelm. For color artwork, make sure that the colors actually mean something and serve to make useful distinctions. If pseudocoloring is necessary, give thought to the color scale being used, making sure that it is tasteful, sensible, and above all, intuitive. Also, be mindful of color contrast when choosing colors; never place isoluminous colors in close proximity (dark red on navy blue, chartreuse on light gray, etc.), and remember that a lot of people out there happen to be red/green colorblind. Please remember this advice when you create color slides and transparencies as well.

### C.2.2. Poster Content

Break your poster up into sections, much like a scientific article. Label all the sections with titles. Always start with an abstract, and write up this section so it can be easily read and digested, in contrast to the abstracts found in some scientific journals. Remember, you are not compelled to put it all down in 150 words or less. Make sure that your abstract contains a clear statement of your conclusions, so your reader will understand where you're headed, so to speak. Follow the abstract with other sections that describe the strategy, methods, and results (although you need not call these sections by those names). Display all your graphs, pictures, photos, illustrations, etc. in context. Write clear, short legends for every figure. Follow up with a Conclusions section. You may wish to add some kind of executive summary at the end; many successful posters provide a bulleted list of conclusions and/of questions answered or raised.

Don't ever expect anyone to spend more than 3-5 min (tops!) at your poster. If you can't clearly convey your message pictorially in less time than this, chances are you haven't done the job properly.

get right to the heart of the matter, and remember the all-important KISS Principle: *Keep It Simple Silly!* In clear, jargon-free terms. your poster must explain:

1. the scientific problem in mind (what's the question?)
2. its significance (why should we care?)
3. how your particular experiment addresses the problem (what's your strategy?)
4. the experiments performed (what did you actually do?)
5. the results obtained (what did you actually find?)
6. the conclusions (what did you think it all means?), and, optionally,
7. caveats (and reservations) and/or
8. future prospects (where do you go from here ?)

Be brief, and always stay on point.

Remember that it never hurts to give credit where it's due. Write up a short acknowledgment section, including your sources of financial support and everyone who helped you to get this work done. No one was ever accused of being too generous here.

### **C.2.3. Poster Presentation**

Start putting your poster together early. Get the title, acknowledgments, bibliography, and other standard items out of the way first, so you aren't stuck at the last minute with these particular details. Experiment with type fonts, sizes, colors, and all that stuff from the start, and begin to plan your layout. Make up any graphics that you know in advance are destined for your poster. Do this soon, because you won't have the time later, and the color PostScript printer queue may be jammed with jobs from all of your colleagues.

Try to stay close by, but off to the side just a bit, so that passers-by can see things also so that you don't block the vision of people already gathered 'round.

If people engage you with a question, then that is your opening to offer to take them through the poster or discuss matters of mutual scientific interest. Conversely, don't ignore people who look as though they may have questions, especially by becoming engrossed in talking to all your buddies.

It's your poster, your- work. Try to hang around for as long as you can to help and advise people. At the very least, give them a chance to associate a human trace with your work.

Consider using some kind of attention-getting gimmick, but beware that it doesn't backfire. Some posters employ a monitor on a cart and display videotape. Other interesting posters provide physical models or various kinds of three-dimensional display. Still others display actual data traces, computer-based simulations, or something else that makes them stand out from the crowd. Provided that your hook is legitimate, and that it doesn't detract from the science or trivialize it in some way, this sort of thing can be eye-catching and helpful. Use good judgement here.

## **C.3. Meetings**

Meetings are an essential activity in the product design and development process. Unfortunately, meetings are not always used and conducted effectively, leading to wasted time. Meetings that are well organised with all participants adhering to a few basic guidelines can realise a great deal of productivity in a relatively short period of time.

Meetings are tools for accomplishing work. The work to be done can include decision making, information gathering or problem solving. A poor use of meetings is dissemination of information or regular reports that are better suited to other means of communication.

A successful meeting begins with good preparation. This increases the likelihood that team members will attend and actively participate, and leave feeling that something valuable was accomplished. Timely follow-up after a meeting ensures the work accomplished in the meeting is not lost.

### **C.3.1. Meeting Preparation**

Decide on the purpose of the meeting.

The purpose of the meeting should be what the team expects to accomplish during the meeting. In other words, the meeting should have a measurable outcome. If the purpose is not measurable, evaluate alternatives other than a meeting to satisfy this type of purpose.

Prepare and distribute an agenda.

If an agenda wasn't created at the previous meeting, poll the team members for agenda items to be submitted at least two days prior to the meeting. If action items are to be completed for the meeting, ask the persons responsible if they will be prepared to report on the action items. Agenda items should be accompanied by the time that should be allotted to address the specific agenda item. (See Attachment A for a sample agenda). For meetings longer than two hours, include a 10-minutes break in the agenda. Distribute the agenda well enough in advance so attendees have time to prepare and be ready to contribute. As a precaution, make hardcopies of the agenda to bring to the meeting. Someone inevitably always forgets to bring his or her agenda.

Determine who needs to be at the meeting.

If all of the participants are not required for most of the agenda items, consider having multiple meetings to make use of peoples time more effectively. It is better to have a few people attend multiple meetings than to have a number of people sit through agenda items in which they have little interest.

Determine the required length of the meeting.

It is common to set meeting lengths to an hour or multiples of an hour and participants will often "fill" the entire length of the meeting. If a meeting only requires 20 minutes or 75 minutes, then set the meeting to that length. Make sure the agenda indicates both a starting and ending time for the meeting.

Find a location and time for the meeting.

For some teams, it is useful to set a regular time and place to meet that satisfies everyone's schedule, then cancel the meeting if there is not a need to get together.

Chairperson and Facilitator.

It should be decided if the chairperson and facilitator roles are given to specific individuals or if they are rotating roles. The chairperson leads the team through the business as presented by the agenda - in other words, deals with the content of the meeting. The chairperson is often the leader of the current phase of the project. The facilitator deals with the process of the meeting and is responsible for ensuring all participants adhere to the policies set by the team.

### C.3.2. The Meeting

The chairperson of the meeting should show up a few minutes early and make sure the meeting place is equipped with everything necessary for the meeting (e.g., chairs, flip charts, markers, overhead, etc.)

Each meeting should begin with the following activities:

#### **At the beginning:**

Attendance.

A record of participants and those absent (“regrets”) are recorded in the meeting minutes. Consider making a notation of late comers. If there is anyone at the meeting who is not familiar with everyone else, quick introductions are in order.

Review minutes of previous meeting.

Meeting participants should come to the meeting having read the minutes of the previous meeting. Only items that there is disagreement on whether they have been accurately recorded are to be briefly discussed and updated.

Review of the Agenda.

This is the point additional agenda items should be put forward. These items should be included only if they are relevant to the meeting and there is time available, or if the team agrees they should take precedence over another agenda item that can be deferred.

Statement of purpose and objectives.

The chairperson should review the purpose of the meeting and the expected outcomes. If necessary, a reminder of meeting policies can be made at this point.

#### **During the meeting:**

Stick to the agenda.

Stay on the topic of the agenda item and be compliant with the allotted time.

Take notes.

One person should be responsible for keeping meeting minutes. These minutes should not detail entire conversations but should record decisions as well as any action items (What needs to be done? Who is responsible? When is it to be done?). Individuals should maintain their own record of actions assigned to them in their logbooks.

Defer items that cannot be effectively addressed.

If it is found during the course of a meeting that an item cannot be addressed because of lack of information or the right individuals are not present, don't waste time on that item. Instead, defer the agenda item to a meeting when it can be adequately

### *C. Presentation, Poster & Meetings*

addressed. Make sure an action item is in place to prevent the same item from being deferred repeatedly.

#### **Concluding the meeting:**

Set the agenda for the next meeting.

In the agenda, include the purpose and objectives of the meeting as well as a time to meet. Any unfinished or unaddressed business from the current meeting should be noted.

Evaluate the meeting.

Briefly discuss if the meeting addressed the intended purpose and objectives, and if not, why.

End on time!

#### **After the meeting:**

Consolidate and distribute the minutes.

The minutes of the meeting should be distributed to the team members within a day of the meeting.

Thank guests.

If any guests attended the meeting, such as external persons, accompany a copy of the meeting minutes with a brief note of thanks.

### **C.3.3. Meeting Minutes**

Meeting minutes serve to record what was done (the actions) at a meeting, not what was said at the meeting. Minutes serve as the legal record of what was decided at a meeting.

The minutes should contain the following items:

- title of the meeting
- date, start and end-time
- moderation
- agenda
- minutetaker
- tasks
- participant
- argumentations
- guest
- decisions
- absent
- attachments
- location of the meeting
- actual project schedule